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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,539	06/15/2001	Achraf Chalabi	165104-600-004	8276

7590 08/11/2005

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EXAMINER	
SPOONER, LAMONT M	

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/882,539	CHALABI, ACHRAF	
	Examiner	Art Unit	
	Lamont M. Spooner	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 10-23* is/are rejected.

7)☒ Claim(s) *8 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 3, 6, 7, 19, and 23 are objected to because of the following informalities:

- In claim 3, page 18, line 2, "said step of predicting said set" should probably be "said step of predicting a set".
- In claim 3, page 19, line 5, "said assigned and identified themes" has antecedent issues.
- In claim 6, line 2, "claim 8" should probably be "claim 5", in order to eliminate antecedent issues with respect to, "said network", and has been examined accordingly.
- In claim 19, lines 3 and 4, "said eliminated sense ambiguities as a result of disambiguation" has antecedent issues.
- In claim 23, page 24, lines 1 and 2, "said eliminated sense ambiguities as a result of disambiguation" has antecedent issues.
- Claims 3, and 7 have antecedent issues, with respect to claim 1, in the alphabetic bulleting of steps.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1- 7, 11, 12, 14-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Wical (US 5,930,788, Wical 1) which incorporates properly by reference, Wical (US 5,708,822, Wical 2) and Wical (5,694,523, Wical 3).

As per **claims 1, 11 and 21**, Wical 2 teaches a method for reducing word sense ambiguities in a sentence, based on thematic prediction, said method comprising the steps of:

receiving an input sentence consisting of a sequence of part-of-speech tagged words (Fig. 2-Words are sequenced by index, and have been tagged by part of speech, C.5.lines 1-9), ;

creating a sequence of sense tagged words from said received sequence of part-of-speech tagged words (Fig. 2-ibid sequence, C.5.lines 9-15-"contextual" tags, C.6.lines 24-27), each of said senses further being theme tagged (C.5.lines 56-50, C.6.lines 51-52);

predicting a set of one or more probable themes associated with said created sequence of sense-tagged words (C.5.lines 35-41-his possible thematic constructions);

weighting each of said one or more probable themes from said predicted set (ibid, his scale), and

Wical 1 teaches reducing sense ambiguities by eliminating remotely probable senses or selecting highly probably senses (C.10.lines 5-10-his theme concepts) from said weighted set of one or more probable themes (C.9.lines 21-38-his disambiguated theme concept).

As per **claim 2**, Wical 1 and Wical 2 teach claim 1, and Wical 2 further teaches wherein said set of predicted one or more probable themes for said input sentence belongs to a predefined set of coarse grain themes (C.5.lines 35-51-his "specific sub-classification" of themes).

As per **claims 3, 12, 16 and 22**, Wical 1 and Wical 2 teach claim 1, and Wical 2 further teaches wherein said step of predicting said set of one or more probable themes comprises the following steps:

searching a database and identifying any pre-stored words in said input sentence (Wical 2-C.4.lines 45-47-his stored lexicon, Wical2, C.4.lines 5-12-his input text/discourse-discourse as text- Wical 2 C.3.lines 13-26, C.4.lines 6-8, corresponding to the stored database-his stored lexicon above, thereby identifying pre-stored words in the lexicon/database-in the parsing from col.,4.lines 45-47);

assigning a theme for each of said identified pre-stored words in said input sentence (Wical 2, C.4.lines 45-47-his thematic parser, Wical 2, C.5.lines 45-51)

accessing a lexicon and identifying one or more themes associated with words in said input sentence (ibid, C.4.lines 3-6), and

outputting all of said assigned and identified themes for said input sentence (Wical 2, C.4.lines 3-6, C.5.lines 35-37, 41-51).

As per **claims 4 and 17**, Wical 1 and Wical 2 teach claim 3 and Wical 1 further teaches wherein said lexicon comprises a limited set of words for a given language (inherent, as no lexicon has every word for a given language) and each of said words are associated with one or more parts-of-speech (Wical 2, C.5.line 1), and each of said

parts-of-speech is associated with one or more senses (Wical 2, C.5.lines 9-15-"contextual" tags, Wical 2, C.6.lines 24-27), and each of said one or more senses is assigned one or more themes out of a set of pre-defined themes (Wical 2, C.6.lines 51, 52-assignation of themes to senses-his thematic aspect tags, C.5.lines 35-41-his all possible thematic constructions as pre-defined themes).

As per **claims 5 and 14,** Wical 1 and Wical 2 teach claim 3 and Wical 2 further teaches wherein said database is accessible over a network (Wical 2, C.40.lines 20-31-performed over network).

As per **claims 6 and 15** Wical 1 and Wical 2 teach claim 5 and Wical 2 further teaches wherein said network is any of the following: wide area network (WAN), local area network (LAN), Internet, or wireless networks (Wical 2, C.40.lines 25-27-connected network is interpreted as any of LAN, Internet, or Wireless).

As per **claims 7 and 20**, Wical 1 and Wical 2 teach claim 1 and Wical 1 further teaches wherein said step of weighting each of said predicted set of one or more probable themes further comprises calculating a theme score, said theme score depending on:

a coefficient whose value depends on parts-of-speech associated with each word in said input sentence (Wical 1, C.13.lines 12-24, 51-C.14.line 53, "parts of speech" identify context and content of words, "calculates a theme strength for each content carrying word"-is interpreted as the coefficient in the calculating of the grade),

Wical 3 teaches number of different words with a similar theme in said input sentence (Wical 3, C.69.lines 56-63-his input discourse as the input sentence.

C.70.lines 4-9-the number of different words, each having a similar theme, directly affect the theme vector, score).

As per **claim 18**, claim 18 sets forth limitations similar to claim 11, and is thus rejected for the same reasons. Wical 1 further discloses a morphological analyzer (Wical 1, C.12.lines 48, 49 "morphology section"-morphological analysis is known to stem words).

As per **claims 19 and 23**, Wical 1 and Wical 2, disclose claim 11, and Wical 2 further discloses:

an interface for displaying said weighted one or more predicted themes (Wical 2, C.3.lines 30-35-the output for user view, is interpreted as display, requiring interface, C.40.lines 40-45-display-) and said eliminated sense ambiguities as a result of disambiguation (ibid, C.40.lines 5-9-"I/O" connected to the graphics subsystem which is connected to the output, Fig. 7, items 1050 and 1060, the input interpreted to contain the eliminated sense ambiguities as a result of disambiguation).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wical ((US 5,930,788, Wical 1) which incorporates properly by reference, Wical (US

5,708,822, Wical 2) and Wical (5,694,523, Wical 3)) in view of Dahlgreen (US 5,794,050).

As per **claim 10**, Wical 1and 2 and 3 disclose claim 1, but do not explicitly teach wherein said reduced sense ambiguities are used as inputs to a natural language processing system.

However, Dahlgreen discloses wherein said reduced sense ambiguities are used as inputs to a natural language processing system (C.5.lines 51-59-his text retrieval application). Therefore, at the time of the invention, it would have been obvious to modify Wical 1, and Wical 2 by using the disambiguated sense for text retrieval. The motivation for doing so would have been to retrieve relevant topics from natural language input (C.6.lines 1-10).

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wical ((US 5,930,788, Wical 1) which incorporates properly by reference, Wical (US 5,708,822, Wical 2) and Wical (5,694,523, Wical 3)) in view of Yokobori et al. (US 2001/0029501).

As per **claim 13**, Wical 1 and 2 teach claim 12, but lack wherein said pre-stored words and themes in said database are updated regularly.

However, Yokobori teaches updating regularly (Fig. 3a "theme" and "keyword part", para. [167]-"latest themes"-requiring regular updating). Therefore, at the time of the invention, it would have been obvious to modify Wical 1 and 2 by updating regularly the database. The motivation for doing so would have been to have the latest themes associated with input words (para. [167]).

Allowable Subject Matter

7. Claims 8, and 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The instant application is deemed to be directed to a non-obvious improvement over Wical. The improvement comprising, **claim 8**, eliminating a stem of reducing sense ambiguities when more than one of a predicted set of probable themes have the same weighting and the weighting is the highest one among the predicted themes.

As per **claim 9**, the improvement comprises a step of reducing sense ambiguities is **performed only if** the number of words in said input sentence possessing a dominant theme is at least **equal to ¼ the total number** of words in the input sentence.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Liddy et al. (US 6,006,221-Liddy 1, which incorporates properly Liddy et al. 5,873,056- Liddy 2) teaches a method for reducing word sense ambiguities in a sentence, based on thematic prediction, said method comprising the steps of: receiving an input sentence consisting of a sequence of part-of-speech tagged words (C.6.lines 5, 6, 14-17-the sequence Liddy 1) ; creating a sequence of sense

tagged words from said received sequence of part-of-speech tagged words (C.7.lines 8-38-his subject field codes (SFC) Liddy 1), each of said senses further being theme tagged (Liddy 2-C.11.lines 24-28, 36-38-themes are his concept tags); predicting a set of one or more probable themes associated with said created sequence of sense-tagged words (C.13.lines 38-41-his possible concepts); weighting each of said one or more probable themes from said predicted set (Liddy 2, C.13.lines 42-47-his probability assigned to each Nth term), and reducing sense ambiguities by eliminating remotely probable senses (Liddy 2, C.11.lines 24-29, C.12.lines 8-10-by selection of the concept group, the sense thereby disambiguated, wherein "a word which has three possible senses may occupy 3 concept groups"...,the concept group having one sense associated with the word, once the concept group is disambiguated, the sense is thereby disambiguated) or selecting highly probably senses from said weighted set of one or more probable themes.

- Liddy (US 6,026,388) reducing word sense ambiguities in a sentence based on thematic prediction.
- Wical (US 5,918,236 and US 5,887,120) teach predicting themes and theme weighting, which reduces sentence ambiguity.

- Powers (US 6,513,027) teaches reducing word sense ambiguities in a sentence, based on thematic prediction.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamont M. Spooner whose telephone number is 571/272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571/272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PATENT EXAMINER
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lms
7/23/05